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14 *Counsel for Plaintiffs and Proposed Class*

15   **UNITED STATES DISTRICT COURT FOR THE**
16   **NORTHERN DISTRICT OF CALIFORNIA**
                        SAN FRANCISCO DIVISION
17

18 DZ Reserve and Cain Maxwell (d/b/a Max Martialis), individually and on behalf of others 19 similarly situated,	Case No.: 3:18-cv-04978-JD
20 Plaintiffs,	**DECLARATION OF DR. CHARLES COWAN IN SUPPORT OF PLAINTIFFS' MOTION TO COMPEL TARGETING DATA AND IN RESPONSE TO FACEBOOK'S DECLARATION OF GERARDO ZARAGOZA**
21 v.	
22 FACEBOOK, INC.,	
23 Defendant.	
24	

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1 I, Dr. Charles Cowan, declare:

2   1.   I am a Managing Partner at Analytic Focus LLC. I have been retained by Plaintiffs'

3 counsel (Cohen Milstein Sellers & Toll PLLC) as an expert in this litigation. I have 40 years of

4 experience in statistical research and design, and I have designed some of the largest and most complex

5 research programs conducted by the Federal Government. I submit this declaration in support of

6 Plaintiffs' letter brief seeking targeting criteria data, and in response to the Declaration of Gerardo

7 Zaragoza, which was submitted to Plaintiffs in connection with this dispute.

8 **Facebook's Assertion Regarding the Size and Time Required for Production**

9   2.   It is my understand that Plaintiffs have requested from Facebook documents sufficient

10 to show the targeting criteria for each advertisement placed by U.S. advertisers between August 15,

11 2014 and May 16, 2019. Based on the Declaration of Mr. Zaragoza, ███████████████████

12 ██████████████████████████

13   3.   This data is highly relevant to the analysis I intend to conduct in connection with this

14 litigation. In particular, I intend to utilize targeting criteria data to analyze the distortion of Potential

15 Reach provided by Facebook to advertisers.

16   4.   My understanding is that Facebook has asserted that ████████████████

17 █████████████████████████████████████

18 █████████████████████████████████████

19 █████████████████████████████████████

20 █████████████████████████████████████

21 █████████████████████

22   5.   ███████████████████████████████████

23 █████████████████████████████████████

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28 [1] ████████████████████████

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1   6.   It is my understanding that Facebook asserts ████████████████

2 ██

3 ██

4 ████████████████████████████████

5   7.   I, and my team, believe ████████████████████████████

6 ██

7 ██

8 ██

9 ██.

10   8.   ██

11 ██

12 ██

13 ██

14 ██

15 ██

16   9.   Second, Facebook asserts that ████████████████████████

17 ██

18 ██

19 ██

20   10.   ██

21 ██

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25   11.   ██

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28 ██

DECLARATION OF DR. CHARLES COWAN
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3   12.   ██

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7   13.   For almost a decade, my firm performed all the quality control for all e-Discovery for

8 the Civil Division for U.S. Department of Justice. My team in Washington DC worked directly with

9 three e-Discovery vendors working for the DOJ on all civil litigation conducted by the DOJ or against

10 agencies of the United States. ████████████████████████████

11 ██

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13 ████████████████████████████

14 **Sampling of Records**

15   14.   It is my understanding that Facebook has suggested sampling of records as an alternative

16 to the production of the full dataset. It is my understanding that Facebook has offered to sample

17 targeting criteria for 5,000 advertisers. I understand that Facebook has not disclosed the total number

18 of advertisers.

19   15.   As a threshold matter, it is my understanding that Plaintiffs are requesting the targeting

20 data to identify the class. In particular, Plaintiffs will utilize the data to exclude (or include) certain

21 advertisers in the class. A sample cannot be used to identify individuals.

22   16.   I have decades of experience designing and evaluating sampling. I both teach sampling

23 at the graduate level and I've published numerous articles about sampling techniques. I served as Chief

24 Statistician in two agencies, the National Center for Education Statistics (in the U.S. Department of

25 Education) and the Federal Deposit Insurance Corporation (FDIC). During my time at the Bureau of

26 the Census, I also served as Chief of the Survey Design Branch where I assisted in the design of the

27 national and state samples, as well as the evaluation of the coverage of this sample.

28

17.   The design and implementation of a statistically reliable representative sample here would be very difficult. This is because ████████████████████████ ██ ██ ████████

18.   The use of sampling to calculate the unemployment rate illustrates this point. A sample of 72,000 households is used to calculate the national unemployment rate. But the sample is not based on a simple random selection of households. Rather, it is based on an understanding of the United States population and workforce, built over decades.

19.   More specifically, for the unemployment rate, the Bureau of Labor Statistics is required to publish estimates of unemployment for all 50 states, the District of Columbia, and the six territories. In some states, there are further estimates needed for more local areas. For example, estimates are produced for Los Angeles, San Francisco, San Diego, and Sacramento, as well as the rest of the state to add up to the full state. Additionally, for each of these states and territories, separate estimates are produced for each gender and each race\ethnic group (2 x 5 = 10 subgroups). Finally, only two-thirds of the population on average qualify for inclusion in the unemployment rate, since one-third of the population is not in the labor force (e.g. students, retirees, etc.).

20.   Ignoring the sub-state estimates, the sample is carefully allocated across 57x10 groups, an average of 126 persons per each location and subgroup, and of these 126, only 84 sampled people (2/3rds) are used to estimate the unemployment rate. A careful balancing act determines how the sample is allocated by state and by subgroup to achieve all these various goals of estimates by state, by race\ethnic group, by gender, and for those who are actually in the labor force.

21.   In short, the sample size is determined at the lowest levels and then added up to higher levels to obtain estimates of the unemployment rate for states and for the U.S. It is not 72,000 housing units sampled and allocated. It is the sample size necessary to make an estimate for each tiny bucket that is required by law for estimation, and then these sample sizes are summed across these hundreds of buckets, yielding the overall sample size necessary for each month.

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22.   Another, related difficulty is presented by the variability of the targeting criteria. Unlike a relatively simple population, such as the US electorate, which has a fairly limited number of variables (age, location, gender, party preference, education), the Facebook targeting criteria has thousands of variables.

Sampling - Requirements

23.   As noted above, Facebook offers estimates of potential reach based on numerous targeting criteria, including at the state level, for cities and areas within cities. Furthermore, targeting criteria can restrict ads shown by gender and by hundreds of different interests of the account holder. Thus, a much larger sample would be needed than 72,000 for a legitimate extrapolation to each and every one of the locations and partitions into specific interest groups. Sampling would be complex and the design of such a sample would be costly.

24.   ███

25.   In order to construct a reliable, statistically significant sample, I would need a comprehensive catalogue of the available targeting criteria, as well as the number of advertisements run across each of the targeting criteria and how that was distributed over time. Again, this is necessary ███.

26.   With this information, I would endeavor to construct a sampling procedure, which would take several weeks, and would need to be validated against Facebook's data. I estimate this would process would take several additional weeks. Once the sampling procedure was complete, Facebook would then have to produce the sample.

27.   Given the unique nature of Facebook's targeting criteria, I am not certain that a statistically significant, representative sample could be readily constructed. But I can say with

confidence that absent the information and process described above, Facebook's sample will not be reliable.

28.   I reserve the right to amend my declaration upon receipt of additional information from Facebook.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on July 3, 2020 in San Antonio, TX.

/s/ Charles Cowan

Charles D. Cowan, Ph.D.